

U.S. Patent Application Serial No. 09/884,998
Amendment dated July 16, 2004
Reply to OA of May 4, 2004

REMARKS

The applicants respectfully submit that no new matter has been added. It is believed that this Response is fully responsive to the Office Action dated May 4, 2004.

The following rejections are set forth in the outstanding Action:

- (1) claims 25, 26, 28 and 29 stand rejected under 35 USC 103 based on Girardello; and
- (2) claims 27 and 30 - 33 stand rejected under 35 USC 103 based on Girardello in view of JP1-272719.

The applicants respectfully request reconsideration of these rejections.

Significant distinguishable claimed structural arrangements of the applicants' claimed invention include the claimed soft layer having a core region and intermediate region, one of the claimed intermediate regions being between the claimed core region and a respective one of the claimed quench hardened layers, the claimed core region being composed of one or more structures selected from the group consisting of ferrite, pearlite, bainite and martensite which are precipitated during cooling from the quenching temperature.

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As to the cited prior art, the applicants respectfully submit that the Examiner's interpretation of Figure 8 of Girardello is improper for the following reasons.

Girardello's center portion (or "core"), as illustrated in Girardello's Figure 8 and marked "SORBITE", is clearly made only of sorbite. The Examiner takes a different position by relying on a single word, "also" in line 64, column 5 in Girardello. (Line 64, column 5 in Girardello, states that: "[i]n the core there is also provided a sorbitic region which * * * " (emphasis added)).

When taken in its full context, the sentence in lines 64 - 67, column 5 in Girardello, is preceded with the sentence in lines 56 - 63 in column 5, which discuss the surface OD and surface ID, which are made up of martensite. Also discussed in this sentence are an outer intermediate structure ("a mixed structure of martensite and sorbite") and an inner intermediate structure ("much thinner and having intermediate structures such as for example pearlite, ferrite and others").

First, when Girardello uses the term "also" in line 64, column 5, this is not meant to suggest that the core also includes materials other than sorbite because there is clearly nothing in Girardello to suggest anything but sorbite formed in the "sorbitic region" in Girardello's core.

Secondly, the materials other than sorbite (e.g., “martensite”, and “pearlite, ferrite and others”) are clearly contained in what are described in lines 56 - 63, column 5 as the “outside (OD) and inside diameters (ID)” (martensite), and the outer (martensite and sorbite) and inner (pearlite, ferrite and others) intermediate structures. In other words, there is no confusion in Girardello that the just-mentioned parts (including the outer and inner intermediate structures) are parts of the core; i.e., the core (solely made up of the sorbite) is separate from the other just-mentioned parts.^{1/}

Thirdly, because of the just-mentioned parts being separate from the core, the use of the term “also” in line 64 means that in addition to the “outside (OD) and inside diameters (ID),” and the outer and inner intermediate structures, Girardello’s metallurgical structure also has a core which is a “sorbitic region.”

It is therefore clear that Girardello did not state that the core region, made up of sorbite, also includes materials other than sorbite.

^{1/}This is a significant distinction because care was taken in the applicants’ January 27, 2004 Supplemental Amendment to ensure that the claimed core region having the soft layer, being “between said inner and outer circumferential surfaces,” is separate from the inner and outer circumferential surfaces. This is done to make sure that there is no confusion that the claimed core region includes the inner and outer circumferential surfaces. After this distinction is made (see, independent claims 25 and 30, as amended in the January 27, 2004 Supplemental Amendment), it is clearly stated that such claimed soft layer of the core region is made up of “the group consisting of ferrite, pearlite, bainite and martensite,” which is clearly distinguishable over Girardello’s “sorbitic region” solely made up of sorbite.

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In view of the above, a person of ordinary skill in the art would not have found the applicants' claimed invention obvious under 35 USC 103 based on Girardello, singly or in view of JP1-272719 (in light of the failure in the teachings of JP1-272719 to supplement the teachings of Girardello).

Accordingly, the withdrawal of the outstanding obviousness rejections under 35 USC 103 based on Girardello, singly or in view of JP1-272719 is in order, and is therefore respectfully solicited.

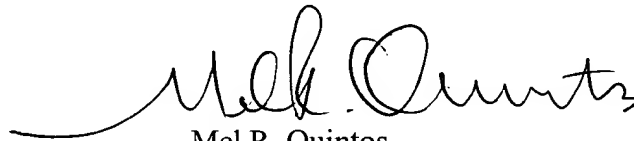
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper to Deposit Account No. 01-2340.

Respectfully submitted,

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